Final Progress Report

1. **TITLE PAGE**

Title: "Impact of Meaningful Use Patient Engagement Objectives in a Multicultural Practice-based Research Network (PBRN)"

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Inclusive Dates of Study: 09/15/2013 to 11/30/2014

Federal Project Officer: Rebecca Roper

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Inclusion of AHRQ priority populations: Inner city, low-income, minority

2. STRUCTURED ABSTRACT (250 words)

Purpose: This study aimed to inform the development of Stage 3 meaningful use (MU) patient engagement criteria SGRP 205, 206 and 207.
Scope: Over a 12-month project period, the team focused on understanding current content, uses and outcomes of clinical summaries generated by the electronic health records systems used by three clinic systems in SPURNet. The team also examined the feasibility of requiring electronic messaging through web portals in a safety net system.
Methods: A sample of after visit summaries (AVS's) generated during patient encounters was analyzed qualitatively to describe the content of the patient instructions section. This section allows providers to insert patient or encounter specific content. Content codes were then linked to quantitative measures of patient satisfaction, recall and adherence. Providers were surveyed regarding their uses of and attitudes toward AVSs. Characteristics of patients utilizing an EHR web portal in a safety net clinic system were described.
Results: AVSs with no instructions section were viewed as less useful. More than 80% of physicians reported using the instructions section, and they reported favorable attitudes toward the AVS as a tool to promote patient engagement. Fewer than 10% of patients in the safety net clinics logged into the EHR web portal to access their records or communicate with providers. Stage 3 MU criteria related to clinical summaries are realistic and are already practice in SPURNet clinics. Criteria related to messaging through web portals may present challenges in safety net systems.
Key Words: After-Visit Summaries, Clinical Summaries, Health Information Technology, Meaningful Use, Patient Portals, Practice-based Research Networks (PBRNs), Qualitative Research

3. PURPOSE (OBJECTIVES OF STUDY)

The goal of this project was to inform development of several Health Information Technology (HIT) Meaningful Use (MU) objectives concerned with patient engagement, specifically:
- SGRP 205. For each office visit, provide clinical summaries for patients that are "pertinent to the office visit, not just an abstract from the medical record."
- SGRP 206. Use Certified EHR Technology to identify patient-specific education resources and provide those resources to the patient, with "80% of patient-specific education materials in at least one" of the top 5 non-English languages spoken by the local population.
- SGRP 207. Use secure electronic messaging to communicate with patients on relevant health information, specifically when more "than 10% of patients use secure electronic messaging to communicate with their providers.

The project was carried out in three health care systems that participate in a practice-based research network organized by The Department of Family and Community Medicine (DFCM) at Baylor College of Medicine. This PBRN, SPUR-Net, is a participating member of the PRIME-Net Center of Research Excellence and Learning funded by an AHRQ P30 grant. Many SPUR-Net clinics have implemented electronic health records (EHRs) and begun participating in the MU initiative under the HITECH act of 2009. Two of the clinic systems that participated in this project serve a privately insured population, and the third serves a low-income, under-insured, predominantly minority population. All three systems have implemented the EpicCare EHR.

This study achieved the following specific aims.

Aim 1: Describe (a) the content of an existing sample of EpicCare After Visit Summary (AVS) Patient Instructions Sections generated during a previously funded project (AHRQ TASK ORDER #17); (b) the relationship between AVS Patient Instruction Section content, including diagnosis-specific instructions, patient education materials, and non-English language materials, and patient-reported outcomes(SGRP 205 AND 206).

Aim 2: Survey SPUR-Net primary care providers who use EpicCare about their knowledge, attitudes, and practices related to using the AVS Patient Instructions Section, including use of (a) "smart phrases" designed by the system; (b) "smart phrases" produced by the individual provider or practice; and (c) non-English language materials; and patient characteristics that determine decisions about the content of patient instructions (SGRP 205 and 206).

Aim 3: *"*Compare patients' utilization of a secure Web portal (the EpicCare EHR) to view their medical records and communicate with providers in a private practice vs. a public health care setting that serves uninsured and under-insured, predominantly minority patients. Variables to be examined include: (a) proportion of NEW patients who register to use the Web portal after their initial visit; (b) time to first use of the Web portal after the initial visit; (c) frequency of using the Web portal during a specified interval; and (d) types of messages/requests sent. (SGRP 207)*"*

4. SCOPE
Background: The Health Information Technology for Economic and Clinical Health Act is the government's first significant effort to support the widespread adoption of Electronic Health Records (EHRs). Incentive payments are available to healthcare professionals and hospitals that demonstrate meaningful use of EHR technology. Stages 1 and 2 have been implemented and deal with data capture, sharing, and advancing clinical processes.   Stage 3 implementation is currently planned for 2017 and is aimed to improve patient outcomes. The meaningful use objectives related to patient engagement call for more timely and effective communication between provider and patient. The objectives include providing patients with online access to their health

information, clinical summaries of their visits, relevant educational information in the patient's preferred language, and the opportunity to communicate with providers through secure electronic messaging.

Meaningful use objectives also recommend that patients or their authorized representative receive a clinical summary after each visit. Stage 1 meaningful use requires that after each visit, a clinical summary should be provided to the patients for more than 50 percent of all office visits within three business days of the clinic visit. Stage 2 states that the clinical summary should be received within one business day and can be received electronically. Stage 3 proposed that all patients should receive a clinical summary after each visit. Most EHRs enable clinicians to supply patients with such information in the form of an After Visit Summary (AVS) generated from data in their medical records. However, Stage 3 requires that the summary must be more than a simple abstract from the medical record, must include instructions pertinent to the visit, and should also be provided in a language other than English, when needed.

Since the introduction of the MU incentive program, our research group has focused on understanding the potential of the AVS as a tool for increasing patient engagement. A 2012 national survey of EHR adoption and meaningful use found that providing patients with an AVS was the most routinely used AVS capability, with nearly 56% of physicians reporting this practice. However, there has been little research on the extent to which providing an AVS affects patient engagement, or what design features, content or manner of distribution are associated with variation in patient engagement. In a previous study, we tested whether randomly varying the amount of information in a printed AVS provided immediately after a clinic visit was associated with patient satisfaction, recall of the AVS content, or self-reported adherence. We found that, overall, patients liked to receive the AVS and were satisfied with its content. However, the amount of information was not associated with any patient outcomes.

Context: The AVS generated by EpicCare contains a patient instructions section that gives the health care professional the opportunity to insert free-text material into the AVS. The AVS patient instruction section can thus be a vehicle to deliver highly personalized clinical information that meets proposed Stage 3 criteria for patient engagement. The surveys conducted to date have not delved into the details of how health systems have implemented the AVS capabilities of their EHR, how physicians use their EHR's AVS capabilities, particularly the patient instructions section, or their attitudes toward the AVS as a useful patient engagement tool. Such data are important for health planners and policy makers charged with finalizing the Stage 3 MU criteria related to patient engagement. Furthermore, there is no literature on whether physicians' choices on how to use the instructions section affect patient satisfaction or other important care outcomes.

This project provides data on how feasible the proposed Stage 3 MU criteria will be to implement given the current practices in a multi-ethnic, socioeconomically diverse PBRN.

5. METHODS
Study Design:
This mixed methods study had three major components: 1) Secondary qualitative data analyses were conducted with existing data collected on AVS, as described above in the preliminary study (see also the description of Methods in **Aim 1** below). 2) We conducted a survey of physicians in three EpicCare clinic systems to understand their current practices and beliefs regarding the use of the AVS to provide individualized, visit specific information (see also the description of Methods in **Aim 2** below). 3) We abstracted medical records to determine patient use of web portals (see also the description of Methods in **Aim 3** below).

6. RESULTS

The following report details the key findings for each aim.

Aim 1: Describe (a) the content of an existing sample of EpicCare After Visit Summary (AVS) Patient Instructions Sections generated during a previously funded project (AHRQ TASK ORDER #17); (b) the relationship between AVS Patient Instruction Section content, including diagnosis-specific instructions, patient education materials, and non-English language materials, and patient-reported outcomes(SGRP 205 AND 206).

We began by performing a qualitative analysis of the Information Section (IS) content inserted by clinic physicians into the AVSs generated during the randomized trial. We then merged the major IS content categories identified in the qualitative analysis to the quantitative outcomes collected during the trial. (Fetters et al., Health Services Research 48:6, Part II (December 2013).

Step 1: Establishing content codes
Six clinicians and four non-clinician researchers (including 2 experienced qualitative researchers) reviewed and coded a sample of 10 AVS instructions sections. Through iterative discussions, the researchers used a grounded theory approach to develop codes and subcodes that addressed the content contained in the instructions sections. The codes were then applied to an additional sample of IS to verify their completeness.

The resulting codes were as follows:
1) referrals (to screening services, specialty consultation, counseling, etc.);
2) information (e.g., patient education web sites, telephone numbers, definition of terms, but without a directive to seek out or otherwise use the information);
3) treatment/prevention recommendations (e.g., engage in physical activity, follow recommended diet, take drugs as directed, monitor glucose or blood pressure);
4) instructions (step by step instructions on how to perform a behavior (e.g., ear wax removal, when and how to take a prescribed medication);
5) standardized documentation of information given or procedures performed at discharge (e.g., performance of medication reconciliation, ensuring patient

understood information given, the names and telephone numbers of the physician and nurse who had seen the patient). A code was identified to capture missing or out-of-place text that might be confusing to the patient, and another code was established to capture whether there was evidence of patient-centeredness (e.g. highly individualized instructions or recommendations, and positive reinforcement or encouragement).

6) Finally, the instructions sections were be coded as to whether a non-English language was used for some or all of the text, and whether the section was left blank. Table 1 provides examples of each of these major codes.

Step 2: Coding Information Section (IS) to Describe Content
One investigator (VP) then coded a total of 196 of the 272 AVSs generated during the trial. In the original trial we used purposive recruitment to fill a pre-determined sample size composed of 50% English speakers and 50% Spanish speakers from four clinics, without regard for maintaining equal sample sizes from each clinic. As a consequence, two of the clinics contributed a disproportionate share of the trial participants. We demonstrated in our trial analysis that potential demographic confounders associated with clinic were equally distributed among the experimental groups. However, for the post hoc analysis of IS content, we were concerned that the over-representation of two clinics with a mostly Hispanic population would skew the analysis. Furthermore, since the IS sections of AVSs from these clinics were very similar in structure and language style, redundancy of content could be achieved without coding all of the AVSs from these two clinics. Thus, we selected a random sample of their AVSs to yield approximately equal sample sizes for each clinic. The **Appendix** shows the number of category codes used for the PI section in each of the four clinics used in the original trial.

Step 3: Combining Qualitative Results with Self-Reported Patient Outcomes Collected during Clinical Trial
The quantitative outcomes collected to assess the effect of variations in content of the AVS during the randomized trial carried out previously were:
- Recall of overall AVS content
- Recall of name, indication, and dosing schedule of each prescribed medication
- Patient perception of "usefulness" of the AVS: a 5-point scale, with 1 being "unable to use" and 5 "extremely useful"
- Patient satisfaction with the content of the AVS: a 9-item scale with response options ranging from "strongly agree" to "strongly disagree". The average item score was used in the analysis.
- Self-reported adherence to medical advice: a five-item scale that elicited patient's difficulty in following their physicians' advice.

After verifying that there was no relationship between the group assigned allocation and IS characteristics, we carried out multiple regression analyses to determine whether the presence of a particular category of content in the IS was associated with each outcome, after adjusting for age, sex, education, and clinic. We also ran a model to examine whether a null IS affected these outcomes. The results of the regression analysis are shown in Table 2.

Conclusions for Aim 1

1. The content of the AVS section varies considerably from one clinic to another, even when they are part of the same health system. Clinic 1 providers used the IS section for the greatest number of categories—that is, almost all coding categories were represented. Clinics 3 and 4 clearly used the IS section for administrative/regulatory purposes, to document that specific functions had been carried out.

2. The regression analysis suggests that whether or not the IS was used affects patients' perceptions of the usefulness of the document. Of the content categories analyzed, using the IS to convey information also affected both perceptions of usefulness, as well as the overall satisfaction score. Although use of the section for referrals was significantly associated satisfaction, the direction of the association was negative.

3. The overarching conclusion from the analyses in this aim is that the IS section is used for highly specialized communications by different providers and systems. Use of a second language is common, and the content of the IS section appears to affect patients' attitudes about the usefulness of the document. However, there was no evidence that the IS contents influenced recall of information or ability to adhere to medical advice.

Aim 2. Survey SPUR-Net primary care providers who use EpicCare about their knowledge, attitudes, and practices related to using the AVS Patient Instructions Section, including use of (a) "smart phrases" designed by the system; (b) "smart phrases" produced by the individual provider or practice; and (c) non-English language materials; and patient characteristics that determine decisions about the content of patient instructions (SGRP 205 and 206).

Proposed Stage 3 Meaningful Use (MU) criteria for electronic health records (EHR) call for patients to receive a visit-specific clinical summary that is more than just an abstract of the medical record. An additional criterion encourages use of languages other than English to disseminate health information. Three clinic systems in our network employ the EpicCare EHR, which includes the option of generating an After Visit Summary (AVS) that summarizes patient information generated during the visit. We undertook a provider survey in the three EpicCare clinic systems to understand their current practices and beliefs regarding the use of the AVS to provide individualized, visit specific information.

The Web-based survey assessed:

1) providers' awareness of current clinic policies and practices for distributing AVSs to patients;

2) content and format of AVS instructions types of information included, provider tailoring of information to each patient, use of non-English language, and standardization of the AVS template; and

3) provider attitudes toward the AVS as a tool for patient education and engagement. A physician panel reviewed and edited the draft survey items.

Once finalized, the survey was distributed by email to the 241 family physicians and internists staffing 34 clinics in the three systems. A total of 138 responses were received.

Key findings were:
- Each health system had different policies and procedures governing the distribution of the AVS at each visit
- 93% of the respondents said they were familiar with the patient instructions section, and 81% of healthcare providers responded that they regularly inserted material into the patient instructions section.
- 32% respondents said that they do put patient instructions in language(s) other than English. Languages listed included Spanish, Chinese and Vietnamese.
- 79% of respondents agreed that AVS was a useful tool to increase patient engagement.
- Providers in the system caring for an under-insured system were more likely to disagree with a statement that their patients preferred receiving health information through a web portal (67% of providers in the system for the under-insured, compared to 37% and 38% in the two systems serving privately insured patients, $p<.001$). Figure 1 displays the distribution of provider responses to attitude items regarding the AVS, by clinic system.

Conclusions for Aim 2:
There is wide variability in the policies and procedures implemented across health systems regarding provider use of the AVS (i.e., enforcement of use, standardize choice of content, responsibility for distributing to patient, etc.). Nevertheless, the great majority of providers report regular use of the AVS and its patient instructions feature. Approximately one-third of respondents are already using the patient instructions section for dissemination of information in languages other than English. The Stage 3 criterion of providing visit-specific information in the clinical summaries, and providing patient education materials in languages other than English appears quite feasible. However, practice settings must establish clear policies regarding uses of the AVS and its patient instructions sections, and insure that the providers are aware of these policies, in order to assure achievement of the MU Stage 3 criteria.

Aim 3: *"Compare patients' utilization of a secure Web portal (the EpicCare EHR) to view their medical records and communicate with providers in a private practice vs. a public health care setting that serves uninsured and under-insured, predominantly minority patients. Variables to be examined include: (a) proportion of NEW patients who register to use the Web portal after their initial visit; (b) time to first use of the Web portal after the initial visit; (c) frequency of using the Web portal during a specified interval; and (d) types of messages/requests sent (SGRP 207)."*

The data files for this aim were obtained by the relevant health system. Difficulties were experienced in obtaining the proper file structures for analysis of the private health system, but it was possible to describe utilization of the public health system's web portal by new patients..

Results for Public Health System

Data were obtained for patients receiving eligibility for the portal during the 2012 calendar year. A sample of 16,219 was used for analysis. The average age=42.14, 57.7% were female, 74% were unemployed, 9.1% were employed full time, and the remaining, were classified as students, retired, or self-employed. The racial/ethnic breakdown was 18.6% Black, 48.3% Hispanic, 12.6% white, 7.66 % Asian/Pacific Islander, and 12.8% other.   Overall, only 3.84% of the patients logged into the EHR web portal within the first six months of obtaining a log-in account at their eligibility visit. The probability of logging in was higher in females than males (4.27% vs. 3.25%, p=.004, although the absolute difference is quite small). Employment was not an important factor in whether or not the individual used the web site (3.9% of employed vs. 3.7% of unemployed logged in at least one time). Highly significant differences (p<.001) were observed by ethnic group as shown in Table 3.

Regarding the private system, we were able to obtain records of 1522 new patients logging into the system, but have not been able to ascertain the number of new patients who did not log in during the first 6 month after their new patient visit. As expected, the demographic characteristics of this sample were different from the public system sample. Sixty-two percent were non-Hispanic white, 65% were employed or retired, and 93 percent had private insurance coverage.

Conclusions for Aim 3:
It is clear that the use of the web portal among public system patients in our PBRN was very low (<10% of patients in most demographic categories). Utilization by Hispanics was essentially non-existent. Because of problems with obtaining a correctly structured analysis file from the private system, we were not able to calculate the percentage of patients who used the web portal after gaining a log-in code. However, based on our knowledge of the number of new patients in a year, it is clear that utilization is probably closer to 90% in that group. If this system is representative of other safety net systems, considerable effort will be required to meet the criterion for Stage 3 use, particularly in systems with a high proportion of Hispanics.

7. <u>LIST OF PUBLICATIONS and PRODUCTS</u>

Manuscripts are currently in preparation reporting on each aim.

Poster Presentations

Pavlik V, Campbell-Voytal K, Nash S, Laufman L, Neale V: Development of a codebook to describe the content of the patient instructions section of an EHR-generated after visit summary. North American Primary Care Research Group PBRN Annual Conference. Bethesda, Md., June 30-July 1, 2014

Almutairi A, Nash SG, Laufman LE, Pavlik V: Provider survey of attitudes toward and uses of an electronic health record after visit summary. North American Primary Care Research Group Annual Meeting, New York, New York, November 22-25, 2014.

Figure 1. Distribution of providers' responses to attitude items regarding the AVS, by clinic system.
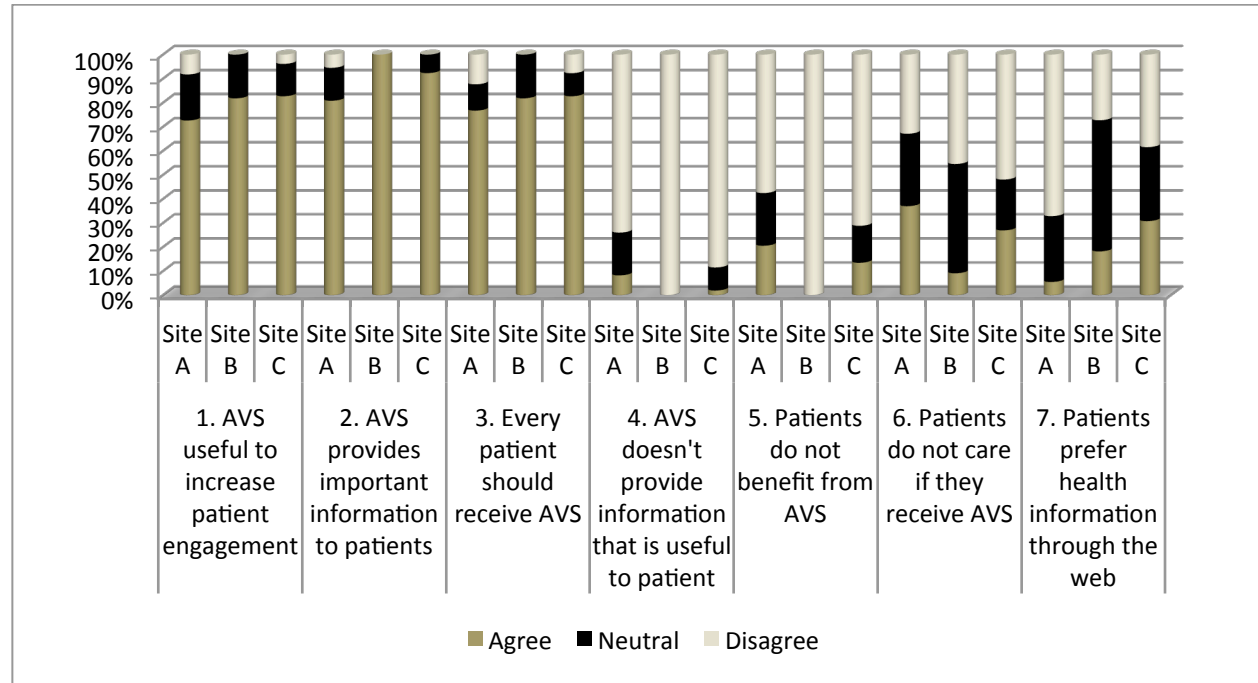
Table 1. AVS Patient Information Code List with Example Text

A) Referral (Call or go to X for Y)

Venir con nutricionista (Come to see the nutritionist)

Please keep the following appointments:
Eye 8/19/2011
Nutrition 10/11/2011
Lab 11/10/2011

A request for **Authorization/Referral** has been submitted for **dermatologist and sleep MD**. You can schedule your test or specialist appointment yourself after we complete the referral.

Rheumatology referral given, instructed to call for appointment.

B) Information (No directive to seek out or go to)

Wt Readings from Last 3 Encounters:

01/31/2011 205 lb (92.987 kg)

01/04/2010 217 lb (98.431 kg)

11/13/2008 206 lb (93.441 kg)

The LabCorp drawing station in our building has your test order(s).
You can use this facility if your insurance requires you to go to Quest - but you should inform the lab tech of this.

For medication refills call ▓▓▓▓▓ Health Center Pharmacy @ [713] 842-4325. They are available Monday thru Friday 7am to 5pm. If your medication does not have a Refills the pharmacy will contact your doctor for an approval.

Your care provider is Dr. ▓▓▓▓▓▓▓ III, PHYSICIAN, MD

For High Blood Pressure and High Cholesterol:
http://www.heart.org/HEARTORG/GettingHealthy/NutritionCenter/Nutrition Center__UCM_001188_SubHomePage.jsp
http://www.nhlbi.nih.gov/chd/lifestyles.htm
www.nhlbi.nih.gov/health/public/heart/hbp/dash/new_dash

Table 1 continued

C) Treatment or Prevention Advice (prescription or treatment recommendations – what to do)

For better control of your medical condition and improved health, please: follow the diet recommended for your condition - see links below on diets for diabetes, high blood pressure, and high cholesterol -Get regular exercise like walking, cycling, or swimming - do at least 20 minutes on most days of the week -Take the medications as prescribed -Monitor your medical condition regularly as recommended

For the pain, I recommend that you alternate tylenol and ibuprofen
600mg ibuprofen every 6 hours and tylenol 500gm every 6 hours - take one or the other every 3 hours by the clock while awake
Continue it is for 2-3 days until the pain resolves

Start Prilosec OTC daily to see if this helps with symptoms.

You may need to decrease the amount of salt you use when cooking and eating.
Avoid packaged foods such as canned foods or frozen meals.
Choose a diet of fruits, vegetables, and low fat dairy products.

You can take Advair twice a day to control asthma best.
Use fluonase and atrovent nasal sprays to stop post-nasal drip that is causing cough

D) Instructions (how to do something)

Inhaler Use
Shake inhaler for one minute.
Exhale as much air out as possible.
Bring inhaler to lips.
Begin deep inhalation
In the middle of this breath, activate the inhaler.
Continue to breath in as much as possible.
Hold breath for about 10 seconds.
Wait one minute before next inhalation.

Desayuno: café y pan (*coffe and bread*)
Snack : Fruta (fruit)
Almuerzo: pollo, vegetal y una harina: tortilla, or *1/4* taza arroz, frijoles (*chicken, vegetable and one flour tortilla OR ¼ cup rice, beans*)
Snack: vaso de leche (*glass of milk*)
Comida: cafe y leche (*coffee and milk*)

For the urinary problem, tighten the bladder muscle when you cough
Strengthen the muscle by doing regular exercise of it
At work, tighten the muscle whenever an e-mail alert shows up on your computer
At night, do the exercise whenever a commercial comes on TV

Table 1 continued

E) Discharge Documentation, Audit, Inventory (not directed to patient)

Copy of medication reconsillation *(sic)* given to patient on discharge, patient instructed to call and schedule follow up appointment with primary doctor, patient verbalize understanding of these instructions.

(8) Rx givento patient.

Information or instructions given to pt in Spanish.

F) Language Used (non-English)

Please call 713-526-4243 in January 2012 and schedule an appointment with your primary care provider for February 2012.*Porfavor llame al 713-526-4243 en Enero 2012 para hacer una cita con su doctor/a general para Febrero 2012.*

Tome mucho liquido
Comida blanda
Continue antibioticos pero tome la medicina para el vomito

G) Layout or Format Confusing

Eye appointment given to patient on 04/11/12. Patient was given 4 medications today, Your physician is ▮▮▮▮▮▮ please call @ [713]526-4243 for follow up appointment on 02/01/12 for 04/12/12. Recuerde traer todos sus medicamentos en su proxima visita.Regrese si los sintomas no mejoran o empoeran.Remember to bring all medication to your next visit.

H) Patient-Centered Language

"Continue to walk the dog - try picking up the pace"

Thank you for choosing Strawberry and have a great day!!

Thankyou for,choosing ▮▮▮▮▮▮▮ health care center for your needs/ we thank you and appreciate you.

I) No instructions (section not used)

Table 2. Association between PI Content and Self-Reported Patient Outcomes

	Self-Reported Patient Outcomes				
	Overall Content Recall*	**Medication Recall***	**Adherence***	**Usefulness Rating****	**Average Satisfaction Score***
PI Content	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)	Coefficient (SE)
Instructions Section Used	0.053 (.373)	-0.062 (.054)	-0.019 (.136)	**1.752 (.448)**[a]	0.015 (.112)
Any Advice	-0.423 (.366)	-0.007 (.050)	0.212 (.115)	0.393 (.410)	-0.044 (.093)
Any Referral	0.654 (.411)	0.071 (.056)	-0.148 (.132)	-0.847 (.526)	**-0.206 (.101)**[c]
Any Information	0.714 (.502)	0.031 (.067)	0.118 (.154)	**1.406 (.525)**[b]	**0.283 (.125)**[c]

*Coefficients are from linear regression models adjusted for age, sex, clinic, and years of education.

**Coefficients are from ordered logistic regression models. The coefficient represents the ordered log odds of being one position higher on the Usefulness scale with a change in PI content. Exponentiation of the coefficient produces the odds ratio. Models adjusted for age, sex, clinic, and years of education.

[a] $p < .001$
[b] $p < .01$
[c] $p < .05$

Table 3. Relationship between Race/Ethnicity and Probability of Using EHR Web Portal

	% of Patient Population (n=16,219)	Percent Logging in to Web Portal in 6 months
Black/African-American	18.6%	5.5%
Hispanic	48.3%	1.5%
White non-Hispanic	12.6%	9.2%
Asian/Pacific Islander	7.7%	7.2%
Other	6.8%	6.8%

Appendix. Number of category codes used for the Patient Information Section in each of the Four Clinics Participating in the Original Trial.

	Clinic 1 (n=48)	Clinic 2 (n=50)	Clinic3 (n=50)	Clinic4 (n=48)
Name- AVS Patient Information Code List				
A. Referral (call or go to X for Y;)				
1. Screening- breast, bowel, cervical, lung	2		4	
2. Lab or diagnostic tests or procedures- MRI, xray, biopsy, etc	13	2	20	5
3. Life style counseling- nutrition; PA; stress, etc		2	5	1
4. Clinician- PCP, specialist, NP, PA, multidisciplinary team (e.g. diabetes)	17	2	31	20
5. Patient education resource(web site, support group, class)	3			1
6. Other --includes med refill information	2		8	7
B. Information. no directive to seek out or go to				
1. Patient education resource- web site, professional orgs, support group, classs, info only	5		13	28
2. Other	11	1		1
3. Lab results- previous; current	7			
4 Blood pressure, weight, bmi etc.	7			
5. Definition of terms or values, including norms or deviations- e.g. BP, BMI	2			
6. General information - system navigation (who to call), phone of PCP, staff, other providers, other appt info	17		13	24
7. Patient education material	4	2		1
C. Treatment or Prevention Advice, prescription or tx recommendations- What to do				
1. Physical Activity	7	5		1
2. Diet	5	9		1
3. Other Prevention- vaccinations; sunscreen;	3	6	3	
4. Medications- OTC, Rx	22	11		1
5. Self-monitoring (BP or glucose tracking logs, diaries, stress index)	7	1	13	29
6. Screening advice	1			
7. Treatment or behavioral goal statements				
8. Other disease management advice	5	3		1
D. Instructions. How to do something				
1. Medications- where to find; how to administer	10			
2. Self-care behavior- steps to performing	5	1		
3. Appointments- steps to making the appointment	2			
4. Self-monitoring- steps to perform, e.g. how to create a food log	1			
5. Other	6			

	Clinic 1 (n=48)	Clinic 2 (n=50)	Clinic3 (n=50)	Clinic4 (n=48)
Name- AVS Patient Information Code List				
E. Discharge documentation. audit, inventory- not directed to patient				
1. Medication reconciliation			31	30
2. Reminders- bring meds to next appointment, make FU appt, etc			9	34
3. Prescriptions provided			26	
a. Specific				
b. Non-specific				
4. Language- reference to non-English use to support understanding				3
5. Names			34	38
a. Physician or provider				
b. Staff Person completing form				
6. Other actions documented for record keeping- (informed patient of...)			22	10
7. Statement that -Patient verbalized understanding			19	16
F. Language used. Non English				
1. Spanish- brief translation of an individual English phrase			16	
2. Spanish- entire AVS info section		21	2	
3. Other language- brief				
4. Other language- entire AVS info section				
G. Layout or Format				
1. Possibly confusing format	3		7	1
2. Other (bad translation)				1
H. Patient-Centered Approach				
1. Language not individualized --patient treated referred to in third person			8	15
2. Positive reinforcement or encouragement	1			
3. Highly individualized instructions or recommendations	2			
4. Other ("thanks")	4		23	2
I. No instructions (section not used)				
	7	25	13	